

REMARKS

Amendments to the Specification

Paragraphs [0015] and [0049] have been amended to correct minor errors. No new matter has been added to the application as a result of the present amendments.

Amendments to the Claims

Claims 1, 3, 5, 7-9, 11, 17-21, 23-26, 28-30 have been amended to further clarify the claimed invention and to correct minor typographical errors. Support for the amendments can be found in the specification and claims as originally filed. Claims 10, 22, and 27 have been canceled. No new matter has been added by way of these amendments.

The Applicants thank the Examiner for withdrawing the finality of the previous Office Action pursuant to 37 C.F.R. 1.114 and entering the Applicants' submission on April 26, 2010.

Claim Objections

Claim 27 is objected to for various informalities. The Applicants have canceled claim 27 to comply with the Examiner's suggestions, which are gratefully acknowledged. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the objections.

Rejection of claims 1-3, 10, 13, 16, 22, 24-27, and 30 under 35 U.S.C. § 102(b)

Claims 1-3, 10, 13, 16, 22, 24-27, and 30 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by McDermott *et al.*, U.S. Patent No. 5,597,380 ("McDermott"). Specifically, the Office asserts that regarding claims 1, 2, 10, and 30 McDermott teaches an auditory prosthesis with a linear array of electrodes that determines the base strategy and stimulation time for 16 channels of spectral information. The Office further asserts that regarding claims 3 and 25, the claim limitation "implantable" merely requires the system to be capable of being implantable into the brain. The Office yet further asserts that regarding claims 13, 16, and 22, McDermott teaches an auditory prosthesis including an array of electrodes, a stimulator unit, and a processor that determines the base strategy and stimulation time for 16 channels of spectral information. The Office yet further asserts that regarding claim 24,

McDermott teaches that the implant is a cochlear implant. Finally, the Office asserts that regarding claims 26 and 27, McDermott teaches that the processor applies temporal adjustments of 4 ms after the stimuli are ordered by amplitude. The Applicants respectfully traverses this rejection.

The Applicants note that claims 22 and 27 have been canceled, thus rendering the rejection moot as to these claims.

As a preliminary matter, it is important to keep in mind that the necessary relationship between the reference and the claimed invention in an anticipation analysis must be one of strict identity. To anticipate a claim, a single prior art reference must expressly or inherently disclose all elements of a claimed invention arranged as in the claim. MPEP 2131.

The instant claims, as amended, disclose the step of deriving temporal adjustments for each stimulation electrode using a latency function. The latency function depends on the filter band signal amplitudes of a plurality of surrounding filter bands and the filter band frequencies of the plurality of surrounding filter bands, relative to the filter band frequency of the particular stimulation electrode.

In contrast, McDermott does not disclose the use of a latency function. The Office asserts in paragraph 9 on page 4 of the Office Action that McDermott discloses applying a temporal adjustment of 4ms. The Applicants respectfully submit that the Office has misinterpreted McDermott. First, McDermott teaches that the microprocessor selects the six largest channels at intervals of 4ms (col. 3, ll. 19-20). Second, McDermott also teaches that “[s]ix electrodes are stimulated during each analysis period” (col. 4, ll. 57-68) and that the stimuli “are presented to the implantee in quick succession every 4ms” (col. 4, ll. 66-68). Finally, McDermott discloses presenting stimuli regularly at 4ms intervals. However, McDermott does not disclose the use of a latency function, and in particular, does not disclose applying a temporal adjustment of 4ms.

Moreover, McDermott fails to disclose a latency function that depends on: (a) the filter band signal amplitudes of a plurality of surrounding filter bands and (b) the filter band frequencies of a plurality of surrounding filter bands, relative to the filter band frequency of the particular stimulation electrode. This is a significant difference from the instant claims. To the extent that McDermott discloses a system that affects the signal in a time-dependent way, there is nothing in McDermott that discloses or suggests looking to the filter band frequencies of the

plurality of surrounding filter bands, relative to the filter band frequency of the particular stimulation electrode.

Thus, McDermott does not meet the strict identity rule of anticipation and, therefore, fails to anticipate the instant claims, as amended, because it does not teach each and every element arranged as in the instant claims.

Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(b) based on McDermott.

Rejections under 35 U.S.C. § 103(a)

A claimed invention is unpatentable if the differences between it and the prior art “are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103(a); see *Graham v. John Deere Co.*, 383 U.S. 1, 14 (1966). The ultimate determination of whether an invention is or is not obvious is based on underlying factual inquiries including: (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the pertinent art; and (4) evaluating evidence of secondary considerations. See *Graham*, 383 U.S. at 17-18. The Supreme Court has emphasized that the key to supporting any rejection under 35 U.S.C. §103 is a clear articulation of the reason(s) why the claimed invention would have been obvious. See *KSR Int’l Co. v. Teleflex Inc.*, 127 U.S. 1727, 1741 (2007). The Court, quoting *In re Kahn*, stated that “rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441, F.3d 977, 988 (Fed. Cir. 2006).

The Claimed Invention

The instant claims, as amended, are directed to deriving temporal adjustments for each stimulation electrode using a latency function, wherein for a particular stimulation electrode, the latency function depends on the filter band amplitudes of a plurality of surrounding filter bands and the filter band frequencies of the plurality of surrounding filter bands, relative to the filter band frequency of the particular stimulation electrode.

Rejection under 35 U.S.C. §103(a) based on McDermott in view of Faltys

Claims 5 and 17 stand rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over McDermott in view of Faltys *et al.*, U.S. Patent Publication US 20010031909 ("Faltys"). In paragraph 12 on page 5 of the Office Action, the Office asserts that McDermott discloses all of the claimed invention except for applying a temporal adjustment to stimulation in response to a weighted sum of proximate stimuli. The Office further asserts that Faltys teaches obtaining weighted sums of proximate stimuli groups, comparing these sums to a selected group and subsequently delaying the stimulation of the current group if its weighted sum is less than the proximate groups for the purpose of assuring the most relevant stimuli are applied to the user. The Applicants respectfully traverse this rejection.

As recently reiterated in *Bayer Schering Pharma AG v. Barr Laboratories Inc.*, 91 USPQ2d 1569, 1573 (Fed. Cir. 2009), generalities or vague or non-existent guidance towards the claimed invention is insufficient to render a claim obvious; there must be some reason for the ordinary artisan to make the *particular* invention being claimed. The combined disclosures of McDermott and Faltys provide no reason for one skilled in the art to use the step of deriving temporal adjustments for each stimulation electrode using a latency function as described in the amended instant claims with a reasonable expectation that using this step would lead to generating stimuli by an auditory prosthesis. Consequently, the instant claims cannot be rendered obvious by the combination of the McDermott and Faltys references.

In contrast to the instantly claimed invention, McDermott is concerned with methods that avoid simultaneous stimulation by ordering the stimuli (e.g., according to amplitude) and presenting the stimuli to the implantee in quick succession every 4ms. Simply put, as described above, McDermott does not disclose the use of a latency function and its dependence (a) the filter band signal amplitudes of a plurality of surrounding filter bands and (b) the filter band frequencies of the plurality of surrounding filter bands, relative to the filter band frequency of the particular stimulation electrode.

Moreover, McDermott provides no reason to the one skilled in the art to use the step of deriving temporal adjustments for each stimulation electrode using a latency function as described in the instant claims, as amended. The results achieved by the present inventor (*i.e.*, deriving temporal adjustments for each stimulation electrode using a latency function to generating stimuli by an auditory prosthesis) were not reasonably predictable from McDermott. Without a reason to use a latency function as described in the instant claims, as amended, nor predictability that using a latency function would lead to generating stimuli by an auditory

prosthesis, the amended instant claims cannot be considered obvious over McDermott. *KSR Int'l Co. v. Teleflex Inc.*, 127 U.S. 1727 (2007).

The teachings of Faltys do not cure the deficiencies of McDermott. Nothing in Faltys, which teaches simultaneous stimulation of electrodes (see paragraphs [0032], [0041], [0045], [0072], [0082], [0088]), suggests the step of deriving temporal adjustments for each stimulation electrode using a latency function of the instant claims, as amended.

The Applicants respectfully submit that Faltys is concerned with creating weighted sums of stimulation groups, comparing them to one another, and subsequently re-ordering the application of these stimulation groups based on the comparison. In contrast to the amended instant claims, Faltys does not consider applying a temporal adjustment on a band-by-band basis. Moreover, Faltys does not include consideration of the filter band frequencies of the plurality of surrounding filter bands, relative to the filter band frequency of the particular stimulation electrode when ordering its stimulation groups. Rather, Faltys only looks to the filter band amplitudes, and in particular, all of these amplitudes for the purpose of ordering them.

Furthermore, Faltys discloses sorting each of the statically assigned groups. In contrast, the amended instant claims do not recite any sorting function. Rather, the latency function depends on the filter band amplitudes of a plurality of surrounding filter bands and the filter band frequencies of the plurality of surrounding filter bands, relative to the filter band frequency of the particular stimulation electrode. This allows the system of the claims to disregard the effect of spectral components on one another where those spectral components are too distant from one another to have a significant effect. The extent to which particular spectral component will be disregarded is determined by the latency function. Faltys is silent on the use of a latency function. In fact, Faltys discloses an alternative control-loop method to deal with the problem of computational complexity necessitated by Faltys' use of sorting each of the statically assigned groups (see [0085]). This is a drastically different from the instant invention, which by use of a latency function, allows consideration of only spectral components in a similar spectral neighborhood.

For the foregoing reasons, the Applicants respectfully submit that the obviousness rejection should be withdrawn.

Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection of claims 5 and 17 under 35 U.S.C. § 103(a) based on McDermott in view of Faltys.

Rejection under 35 U.S.C. §103(a) based on McDermott in view of Gibson

Claims 11, 12, 23, and 31 stand rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over McDermott in view of Gibson, U.S. Patent Publication US 20040078057 ("Gibson"). The Applicants respectfully traverse this rejection.

For the reasons stated above, claims 11, 12, 23, and 31 are not obvious over McDermott.

The teachings of Gibson do not cure the deficiencies of McDermott. Gibson is concerned with pharmaceutical drug delivery means and is silent on the use of latency function as described in the instant claims, as amended.

Since the combined disclosures of McDermott and Gibson provide no reason for one skilled in the art to use the step of deriving temporal adjustments for each stimulation electrode using a latency function as described in the amended instant claims with a reasonable expectation that using this step would lead to generating stimuli by an auditory prosthesis as described in the instant claims, instant claims cannot be obvious over these references.

Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection of claims 11, 12, 23, and 17 under 35 U.S.C. § 103(a) over McDermott in view of Gibson.

Conclusion

The Applicants respectfully submit that in view of the foregoing arguments and amendments the claims are in condition for allowance, which the Applicants respectfully request. If the Examiner believes a teleconference will advance prosecution, he is encouraged to contact the undersigned as indicated below.

Respectfully submitted,

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